

CALYPSO PRODUCT LIST

Mar 2005 Cards and Tickets Calypso Rev 2

This note contains the list of *Calypso Certified cards*.

It also contains a list of contactless tickets often used as complement in Calypso systems.

The main characteristics of the products are also given.

Introduction

Calypso cards ensure a high level of security and functionalities for contactless transactions, making them particularly suitable for private monetary transactions, such as network transit ticketing, loyalties and services applications.

However, very low cost contactless tickets are sometimes needed as a complement. These tickets offer a low level of security and their use should be evaluated carefully for security risks.

Note: All requests for inclusion in the present product list may be sent to Innovatron (calypso@innovatron.fr).

Calypso Cards

Calypso Cards are microprocessor cards certified as compliant with the *Calypso Specification for Ticketing, Card Specification (010209-MU-CalypsoCardSpec)* and with the Calypso Technical Notes.

The following cards are certified for compatibility with the *Calypso Specification Rev 2*:

Name	Certificate Date	Contactless	Applications
CD21	2005-01-17	ISO14443B*	Calypso (1 to many applications) Token Purse DES/DESX
Tango For Calypso	2005-03-20	ISO14443B**	Calypso (1 to many applications) DESX
CD97-BX	2003-10-20	ISO14443B*	Calypso (2 applications) Token Purse DES/DESX
CD Light	2002-09-15	ISO14443B*	Calypso (1 application) DESX
GTML2	2002-07-30	ISO14443B**	Calypso (1 application) DES/DESX
BMS-2	2004-03-15	ISO14443B*	Moneo banking electronic purse Calypso (2 applications) DES/DESX

(*) May also work using the pre-ISO Calypso Rev 1 radio protocol, dynamically choosing the correct protocol depending upon the reader.

(**) Other versions may exist (e.g. using only the pre-ISO Calypso Rev 1 radio protocol).

Note: Two other products, the *CD97* and the *GTML*, are certified for compatibility with the Calypso Specification **Rev 1**. These products are available mainly for compatibility with some existing systems.

Calypso SAM

The following SAM are certified for compatibility with the Calypso Specification Rev 2:

Core Name	Certificate Date	Features
SAM-S1 D4 SAM-S1 D6 SAM-S1 D7	2001-07-23	62 work keys 4 SAM management keys Keys managed by index and KIF/KVC Digital signature, DES ciphering, Lockable Management of SAM personalization DES/DESX

Contactless Tickets

Very low cost contactless tickets are sometimes needed as a complement to Calypso cards. These tickets offer a low level of security and their use should be evaluated carefully for security risks.

The following table lists some contactless memory products used in Calypso systems (see the products specifications for the detailed characteristics).

Name	Contactless	Memory	Additional features
CTS256B	ISO14443B (1,2)	256 bits	8 bytes serial number Read only lockable zones 12 OTP bits 176 bits of user memory
CTS512B	ISO14443B (1,2)	512 bits	8 bytes serial number Read only lockable zones 0 to 128 OTP bits 432 to 304 bits of user memory
SR176	ISO14443B (1,2)	256 bits	8 bytes serial number Read, Write and Write lockable zones 176 bits of user memory
SRIX 512	ISO14443B (1,2)	608 bits	8 bytes serial number Read, Write and Write lockable zones 160 OTP bits 288 bits of user memory Two one-way-counters with anti-tearing protection
SRIX 4k	ISO14443B (1,2)	4,192 bits	8 bytes serial number Read, Write and Write lockable zones 160 OTP bits 3,872 bits of user memory Two one-way-counters with anti-tearing protection

Further References

Calypso web site	www.calypsonet-asso.org
Innovatron web site	www.innovatron.fr
Calypso Specification for Ticketing, Card Specification, v2.3 External specification of the Calypso Rev.1 and Rev.2 cards.	<i>010209-MU-CalypsoCardSpec</i>
Calypso Specification for Ticketing, SAM Specification, v1.1 External specification of the Calypso SAM.	<i>010210-MU-CalypsoSAMSpecs</i>
CD Light User Manual, v1.2	<i>020906-MU-CDLight</i>
CD97 BX User Manual, v1.0	<i>030312-MU-CD97BX</i>
SR176 Data Sheet, v0.8	<i>DS.SR176/0203</i>
SRIX512 Data Sheet	<i>SRIX512-DataSheet-Apr2004</i>
SRIX4K Data Sheet	<i>SRIX4K-DataSheet-Apr2004</i>
CTS Information	<i>(contact ASK: xb@ask.fr)</i>
SAM-S1 information	<i>(contact Spirtech: mail@spirtech.com)</i>
Identification cards - Contactless IC cards - Proximity cards Part 1 : Physical characteristics. Part 2 : Radio frequency power and signal interface. Part 3 : Initialization and anticollision. Part 4 : Answer to select and transmission protocol.	<i>ISO/IEC 14443</i>

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